DOCUMENT RESUME

ED 038 346 SP 003 734

AUTHOR Kranz, Patricia L.; And Others
TITLE The Relationships Between Teacher Perception of Pupils and Teacher Behavior Toward Those Pupils.
PUB DATE 70
NOTE 13p.; Paper presented at the AERA meeting, Minneapolis, March 1970

EDRS PRICE EDRS Price MF-$0.25 HC-$0.75
DESCRIPTORS Academic Ability, Academic Achievement, *Classroom Communication, Elementary School Students, Elementary School Teachers, *Student Teacher Relationship, *Teacher Attitudes, *Teacher Behavior, *Verbal Communication
IDENTIFIERS Observational System of Instructional Analysis

ABSTRACT

A study attempted to determine whether there are significant differences between substantive, positive appraisal, negative appraisal, and managerial behaviors a teacher exhibits toward pupils he perceives to be of high, average, and low academic potential and of high, average, and low achievement level. Ten null hypotheses were formulated to answer the questions. Independent variables were high, average, and low teacher perceptions of pupil academic potential and pupil achievement; dependent variables were the substantive, positive appraisal, negative appraisal, managerial, and total teacher verbal behaviors. Subjects were 11 urban elementary teachers and their 285 pupils. Teacher verbal behavior data was collected through classroom observation (150 minutes per class) using a modification of the Observational System of Instructional Analysis (Hough and Duncan, in press); data included identification of pupils who were the object of each individually-directed teacher behavior. Data was collected from each teacher regarding his perceptions of the relative academic potential and achievement level of each pupil. Statistical analyses included chi-square, Spearman rank correlation coefficients, and Kendall coefficients of concordance. In general, findings suggest relationships between the perceptions a teacher has regarding a pupil and the kinds and frequency of certain teaching behaviors he directs toward that pupil. (Complete findings included.) (JS)

ED038346

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

THE RELATIONSHIPS BETWEEN TEACHER PERCEPTION OF PUPILS AND TEACHER BEHAVIOR TOWARD THOSE PUPILS

Patricia L. Kranz, Wilford A. Weber, and Kenneth N. Fishell
Syracuse University

This study investigated relationships between a teacher's perceptions of the academic potential and the achievement level of a pupil and the types of behaviors that teacher directs toward that pupil.

The study stemmed from the notion that the perceptions and expectations the teacher has regarding a pupil influence the nature of the classroom interactions the teacher has with that pupil. This idea has been suggested by a number of recent investigations; the foremost of these has been the much-criticized (Barber and Silver, 1968; Snow, 1969; and Thorndike, 1968) work of Rosenthal (Rosenthal and Jacobson, 1968). Regardless of the viewpoint one takes concerning the validity of Rosenthal's methodology and conclusions, the issues raised by his work do deserve attention. Indeed, even if one accepts the notion that teacher expectation does influence pupil performance, it remains necessary to examine relationships between teacher expectation and teacher behavior for it is teacher behavior which more directly influences pupil behavior.

From the above cited research it follows that the teacher may behave differently toward pupils he perceives to differ with regard to academic potential. Likewise, it follows that the teacher may behave differently toward pupils he perceives to differ with regard to achievement level. This study sought to determine the nature of such differences in teacher verbal behaviors as might exist.

Specifically, the study attempted to answer the following questions:

1. Are there significant differences between the substantive, positive appraisal, negative appraisal, and managerial behaviors a teacher exhibits toward: (a) pupils he perceives to be of high academic

---

Paper presented at the annual meeting of the American Educational Research Association, Minneapolis, March, 1970.

SP003734

potential, (b) pupils he perceives to be of average academic potential, and (c) pupils he perceives to be of low academic potential?

2. Are there significant differences between the substantive, positive appraisal, negative appraisal, and managerial behaviors a teacher exhibits toward: (a) pupils he perceives to be at a high achievement level, (b) pupils he perceives to be at an average achievement level, and (c) pupils he perceives to be at a low achievement level?

In order to answer these questions systematically, ten null hypotheses were formulated. These allowed for the statistical testing of relationships between teacher perceptions of pupil academic potential and pupil achievement level as high, average, or low--the independent variables--and the substantive, positive appraisal, negative appraisal, managerial, and total teacher verbal behaviors exhibited toward individual pupils--the dependent variables.

The hypotheses called for the collection of two types of data: (1) teacher verbal behavior data, and (2) teacher perceptions data. These data were collected from the 285 urban elementary school pupils and eleven classroom teachers which composed the sample.

The quantification and qualification of teacher verbal behaviors was accomplished through use of direct systematic classroom observation. A modification of the Observational System of Instructional Analysis (Hough and Duncan, in press) was used for this purpose. The modification allowed for the categorization of teacher verbal behaviors directed toward individual pupils according to sixteen categories. For analysis purposes, these sixteen categories were later grouped into four major classifications:

1. Substantive behaviors: those behaviors that facilitate the meeting of instructional objectives including substantive lecturing, substantive questions and answers, and clarification of substantive behaviors.
2. Positive appraisal behaviors: those behaviors which tend to positively reinforce the pupil including affirmation of responses, acceptance of responses, and praising responses.
3. Negative appraisal behaviors: those behaviors which tend to negatively reinforce the pupil including negation of responses and negative personal judgment following responses.
4. Managerial behaviors: those behaviors that establish the conditions under which instructional objectives may be achieved including managerial lecturing, managerial questions and answers, and clarification of managerial behaviors.

Each teacher supplied a seating chart of his class prior to the observation; this allowed for the identification of the pupil who was the object of each of the individually-directed teacher behaviors. In this way, observational data were collected from each teacher and from each of the

pupils with whom the teacher interacted. Approxiamtely one hundred and fifty minutes of data were collected from each class.

Data were also collected from each of the eleven teachers regarding his perceptions of the relative academic potential and achievement level of each of his pupils; these data--collected following the completion of all observations--were obtained through the use of the teacher's ranking of the pupils in his class with regard to : (1) his perceptions of their academic potential, and (2) his perceptions of their achievement level. Each of these two sets of data was used to divide each class in three equal-sized groups. Those ranked highest in academic potential were labeled the high potential group; the middle third was labeled the average potential group; and those ranked lowest were labeled the low potential group. In a similar fashion, the teacher rankings of pupil achievement level were used to designate high, average, and low achievement groups.

The statistical analyses relevant to the hypotheses were accomplished through the use of Chi Square procedures. In all cases, the five percent level of significance was used as the criterion level for rejection of the null. In addition, Spearman rank correlation coefficients were computed to determine the level of agreement between teacher rankings of pupil academic potential and rankings of pupil achievement level. Kendall coefficients of concordance were calculated to obtain estimates of the degree of association between the patterns of teacher behaviors the eleven teachers directed toward high, average, and low academic potential pupils and high, average, and low achievement level pupils.

The Spearman rank correlation which was calculated to estimate the degree of relationship between the ranking of academic potential and the ranking of achievement level completed by each teacher yielded coefficients which ranged from .74 to 1.00. These indicate that teacher rankings of their pupils with regard to perceptions of academic potential and achievement level were quite similar. Clearly, most teachers saw their pupils performing at a level in keeping with their potential. These rather high levels of agreement account for the similarity of the findings concerning patterns of teacher behavior as related to the two independent variables--perceptions of academic potential and achievement level.

As shown in Table 1, the data regarding the substantive behaviors teachers directed toward pupils yielded statistically significant differences

Table 1

Frequency and Chi Square Data Regarding Substantive Teacher Behaviors Directed Toward High, Average, and Low Academic Potential and Achievement Level Pupils for All Teachers

Academic Potential				
Teacher	High	Average	Low	Chi Square
01	175	131	99	21.57***
02	158	151	41	73.82***
03	163	116	100	16.98***
04	140	62	68	41.87***
05	99	92	27	43.39***
06	159	125	107	10.70**
07	198	101	164	31.39***
08	145	217	179	14.39***
09	109	88	54	18.41***
10	113	70	27	52.83***
11	213	100	39	132.90***
Achievement Level				
Teacher	High	Average	Low	Chi Square
01	149	147	106	8.79*
02	158	151	41	73.82***
03	164	78	137	30.62***
04	142	81	45	53.83***
05	99	92	27	43.39***
06	206	78	112	66.61***
07	178	168	117	13.87***
08	176	160	212	7.77*
09	108	59	88	14.28***
10	107	74	29	43.80***
11	227	87	39	162.20***

*$p < .05$ (df = 2, Chi Square = 5.99).
**$p < .01$ (df = 2, Chi Square = 9.21).
***$p < .001$ (df = 2, Chi Square = 13.82).

in all twenty-two cases. That is, the data indicate that each of the eleven teachers differentiated the substantive behaviors he directed toward those pupils he perceived as being of high, average, and low academic potential and differentiated the substantive behaviors he directed toward those pupils he perceived as being of high, average, and low achievement level. Concerning substantive teaching behaviors, therefore, it seems reasonable from these data to conclude that teachers did behave differently toward those pupils they perceived differently with regard to academic potential and with regard to achievement level.

The data concerned with positive appraisal teacher behaviors presented in Table 2 show that nine of the eleven teachers behaved significantly differently toward pupils perceived differently with regard to academic potential and eight of the eleven teachers behaved significantly differently toward pupils perceived differently with regard to achievement level. These data lend substantial support to the notion that teachers do behave differently as to the relative amount of positive appraisal behaviors they direct toward those pupils whom they perceive to be of either high, average, and low academic potential or high, average, and low achievement level.

Table 3 presents the results relevant to teacher use of negative appraisal behaviors. The data yielded statistically significant differences for only one of the eleven teachers; that one teacher differentiated his behaviors toward both pupils he perceived to differ in academic potential and pupils he perceived to differ in achievement level. Aside from this one case, the data suggest that there was no relationship between teacher perceptions of pupils and negative appraisal teacher behaviors directed toward those pupils. It should be noted, however, that the low frequency of negative appraisal behaviors may have contributed to the lack of statistically significant findings.

The data regarding managerial teacher behaviors are presented in Table 4. The academic potential data yielded statistically significant differences for six teachers; the achievement level data yielded statistically significant differences for four teachers. These results lend only partial support to the notion that teacher perceptions and managerial teacher behaviors are related. Since significant differences occurred for the most part in those cases with the highest frequency of managerial behaviors, it seems reasonable to suggest that more clear-cut results might have been

Table 2

Frequency and Chi Square Data Regarding Positive Appraisal Teacher Behaviors Directed Toward High, Average, and Low Academic Potential and Achievement Level Pupils for All Teachers

Academic Potential				
Teacher	High	Average	Low	Chi Square
01	81	45	41	17.44***
02	23	24	9	7.54*
03	53	24	30	13.14**
04	38	10	6	33.78***
05	14	11	4	5.45
06	42	10	25	19.97***
07	48	33	16	15.86***
08	57	60	48	1.42
09	49	34	10	24.97***
10	40	22	17	11.11**
11	37	18	10	17.75***
Achievement Level				
Teacher	High	Average	Low	Chi Square
01	75	58	43	8.74*
02	23	24	9	7.54*
03	50	21	36	11.79**
04	39	9	6	37.00***
05	14	11	4	5.45
06	38	15	23	10.76**
07	45	41	11	21.36***
08	62	45	55	2.70
09	48	21	25	13.55**
10	32	29	17	4.85
11	40	15	10	23.85***

*$p < .05$ (df = 2, Chi Square = 5.99).
**$p < .01$ (df = 2, Chi Square = 9.21).
***$p < .001$ (df = 2, Chi Square = 13.82).

Table 3

Frequency and Chi Square Data Regarding Negative Appraisal Teacher Behaviors Directed Toward High, Average, and Low Academic Potential and Achievement Level Pupils for All Teachers

Academic Potential				
Teacher	High	Average	Low	Chi Square
01	2	3	0	2.80
02	4	4	1	2.00
03	6	2	5	2.00
04	7	3	9	2.95
05	3	3	1	1.14
06	1	4	7	4.50
07	0	3	2	2.80
08	3	9	9	3.43
09	13	7	8	2.21
10	17	14	1	13.56**
11	11	4	8	3.22
Achievement Level				
Teacher	High	Average	Low	Chi Square
01	1	4	0	5.20
02	4	4	1	2.00
03	8	1	4	5.69
04	9	5	4	2.33
05	3	3	1	1.14
06	2	3	7	3.50
07	0	4	1	5.20
08	6	6	9	0.86
09	13	8	7	2.21
10	16	12	4	7.00*
11	12	4	8	4.00

*$p < .05$ (df = 2, Chi Square = 5.99).
**$p < .01$ (df = 2. Chi Square = 9.21).

Table 4

Frequency and Chi Square Data Regarding Managerial Teacher Behaviors Directed Toward High, Average, and Low Academic Potential and Achievement Level Pupils for All Teachers

Academic Potential				
Teacher	High	Average	Low	Chi Square
01	9	7	10	0.54
02	6	7	12	2.48
03	3	1	10	9.57**
04	34	68	34	17.00***
05	11	30	67	45.06***
06	9	14	19	3.57
07	7	5	5	0.47
08	15	12	11	0.68
09	35	28	12	11.12**
10	20	36	9	17.02***
11	3	12	5	6.70*

Achievement Level				
Teacher	High	Average	Low	Chi Square
01	8	7	11	1.00
02	6	7	12	2.48
03	2	2	10	9.14*
04	33	60	38	6.76*
05	11	30	67	45.06***
06	10	12	21	4.79
07	7	4	6	0.82
08	13	7	19	5.54
09	35	20	20	6.00*
10	28	16	24	3.29
11	11	5	5	3.43

*$p < .05$ (df = 2, Chi Square = 5.99).
**$p < .01$ (df = 2, Chi Square = 9.21).
***$p < .001$ (df = 2, Chi Square = 13.82).

obtained had more data been collected in each classroom.

As indicated in Table 5, the data relevant to all individually-directed teacher behaviors revealed statistically significant differences for eight teachers and seven teachers with regard to academic potential and achievement level respectively. These data tend to support the conclusion that teachers do behave differently toward pupils whom they perceive as different in academic potential or in achievement level.

Perhaps the most interesting of the findings had to do with the patterns of teacher behaviors exhibited toward pupils; these findings are summarized in Table 6.

The most common pattern regarding substantive teacher behaviors was one in which those pupils perceived to be of high academic potential or of high achievement level had more teacher behaviors directed toward them than did those perceived as average or low; further, those perceived as average had more behaviors directed toward them than did those perceived as low. Indeed, the H > A > L pattern occurred in eight cases with regard to academic potential and in seven cases with regard to achievement level. These were all statistically significant. The next most common pattern for substantive teacher behaviors was H > L > A.

The H > A > L pattern was also the most commonly used pattern of positive appraisal teacher behaviors. The data concerned with academic potential revealed that seven teachers used that pattern while the data concerned with achievement level revealed that six teachers used that pattern. Of these, differences were statistically significant for six and four teachers respectively. Table 6 also shows that for both of the independent variables, the next most common pattern was again H > L > A.

The data regarding negative appraisal teacher behaviors did not suggest any pattern as clearly most common. Although there is a trend favoring the H > A > L pattern, the lack of statistically significant differences would make any conclusion most tenuous. Indeed, the academic potential data indicate that all six possible patterns were used while the achievement level data indicate that five of the six possible patterns were used. The most allowed by the data is a recognition of the fact that in six cases concerning academic potential and in seven cases concerning achievement level those pupils perceived in the high group had more behaviors directed toward them than did pupils in either of the other two groups. Any further conclusions regarding the negative appraisal behaviors would be highly suspect.

Table 5

Frequency and Chi Square Data Regarding Total Teacher Behaviors Directed Toward High, Average, and Low Academic Potential and Achievement Level Pupils for All Teachers

Academic Potential				
Teacher	High	Average	Low	Chi Square
01	267	186	150	7.18
02	191	186	63	25.42***
03	225	143	145	17.69**
04	219	143	117	56.96***
05	127	136	99	99.08***
06	211	153	158	26.30***
07	253	142	187	19.85**
08	220	298	247	8.26
09	206	157	84	8.17
10	190	142	54	20.55**
11	264	134	62	26.36***
Achievement Level				
Teacher	High	Average	Low	Chi Square
01	233	216	160	9.71
02	191	186	63	25.42***
03	224	102	187	10.31
04	229	155	93	36.78***
05	127	136	99	99.08***
06	256	108	163	18.88**
07	230	217	135	15.19*
08	257	218	295	5.26
09	204	108	140	4.26
10	183	131	74	17.94**
11	290	111	62	12.23*

*$p < .05$ (df = 6, Chi Square = 10.64).
**$p < .01$ (df = 6, Chi Square = 16.82).
***$p < .001$ (df = 6, Chi Square = 22.46).

Table 6

Summary of Teacher Behavior Patterns for All Teachers on All Variables

Pattern	Substantive		Positive Appraisal		Negative Appraisal		Managerial		Total	
	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2
Academic Potential (Kendall W = .81, transformed to Chi Square for 11 df = 97.75, $p < .001$)										
H > A > L	8	8	7	6	3	1	3	1	6	4
H > L > A	2	2	2	2	3	0	-	-	3	3
A > H > L	-	-	2	1	1	0	1	1	1	1
A > L > H	1	1	-	-	1	0	2	2	1	0
L > H > A	-	-	-	-	1	0	2	1	-	-
L > A > H	-	-	-	-	2	0	3	1	-	-
Achievement Level (Kendall W = .83, transformed to Chi Square of 11 df = 101.00, $p < .001$)										
H > A > L	7	7	6	4	5	1	3	1	6	5
H > L > A	3	3	4	3	2	0	1	0	3	1
A > H > L	-	-	1	1	1	0	1	1	1	1
A > L > H	-	-	-	-	1	0	-	-	-	-
L > H > A	1	1	-	-	-	-	2	0	1	0
L > A > H	-	-	-	-	2	0	4	2	-	-

N_1 = Number of teachers with indicated pattern.
N_2 = Number of teachers in which pattern differences were statistically significant.

While a number of significant differences were obtained relevant to the managerial teacher behavior data, no single pattern emerged as the most common. Five of the six possible patterns appear for each of the independent variables. There is, however, a slight trend suggesting that those pupils perceived as low with regard to either academic potential or achievement level received more managerial teacher behaviors than either the high or the average pupils.

The overall data for all teacher behaviors once again suggests that the $H > A > L$ pattern was most common. This occurred for six teachers relevant to academic potential and six teachers relevant to achievement level. Of these, differences were significant in four and five cases respectively. The $H > L > A$ pattern once again emerged as the second most common pattern.

While the results are not totally clear-cut, it seems reasonable to suggest that the teachers in this study gave more substantive, more positive appraisal, and more total teacher behaviors to pupils perceived as high in academic potential or achievement level than to pupils perceived as either average or low with pupils perceived as average receiving more than those perceived as low. Further, it may be suggested that those pupils perceived as low in academic potential receive more managerial teacher behaviors than those seen as either high or average.

Another interesting finding dealt with the results obtained through use of the Kendall coefficient of concordance which was computed to estimate the degree of association of the patterns of behaviors the eleven teachers used relevant to academic potential and relevant to achievement level. As shown in Table 6, the academic potential data revealed a Kendall W of .81 while the achievement level data revealed a Kendall W of .83; both of these were statistically significant ($p < .001$). This indicates that the patterns of teacher behaviors used by the teachers in this study were quite similar. In other words, the teachers in this study tended to differentiate their behaviors toward their pupils in very much the same manner.

In summary, then, this study suggests that there are relationships between the perceptions a teacher has regarding a pupil and the kinds and frequency of certain teaching behaviors he directs toward that pupil. It remains now to study the problem of indiviudally-directed teacher behaviors more rigorously and then to investigate the effects such differentiated teacher behavior might have on pupil productivity. We consider this study to be an important first step in this regard.

REFERENCES

Barber, T. X., and Silver, M. J. Fact, Fiction, and the Experimenter Bias Effect. Psychological Bulletin Monographs, 1968, 70, 6, Part 2.

Hough, J. B., and Duncan, J. K. Teaching: Description and Analysis. Reading, Massachusetts: The Addison-Wesley Publishing Company, in press.

Rosenthal, R., and Jacobson, L. Pygmalion in the Classroom. New York: Holt, Rinehart, and Winston, Incorporated, 1968.

Snow, R. E. Unfinished Pygmalion. Contemporary Psychology, 1969, 14, 197-199.

Thorndike, R. L. Review of Rosenthal, R. and Jacobson, L. Pygmalion in the Classroom. American Educational Research Journal, 1968, 5, 708-711.